

REMARKS

In view of the foregoing amendments and the following remarks, reconsideration of all pending claims is respectfully requested.

Claims 1-18, 20-35, 37-43 are pending in this Application.

Claim 36 is objected to because of informalities. Claim 36 has been deleted, and thus this objection is overcome.

Claims 10 and 39 stand objected to under 35 USC §112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 10 and 39 have been amended to overcome this rejection.

Claims 1-8, 12, 13, 15-19 and 42-44 stand objected to under 35 USC §102(e) as being anticipated by Nakayama et al, U.S. Patent 6,208,023. Claims 11 and 14 stand objected to under 35 USC §103(a) as being unpatentable over Nakayama et al, U.S. Patent 6,208,023. Claims 20-27, 29-32, 34-38 and 40-41 stand objected to under 35 USC §103(a) as being unpatentable over Nakayama et al '023 in view of Ishinaga U.S. Patent 5,936,264. Claim 9 stands objected to under 35 USC §103(a) as being unpatentable over Nakayama et al '023 in view of Crowley et al U.S. Patent 6,743,597. Claims 28 and 33 stand objected to under 35 USC §103(a) as being unpatentable over Nakayama et al '023 in view of Ishinaga U.S. Patent '264 as applied to Claims 1, 20, 23, 27 and 32 above, and further in view of Crowley et al '597.

Independent Claim 1 has been amended to better define over the prior art of record. Specifically, Claim 1 has been amended to further recite that at least one lead has a shaped end

proximate the substrate and configured to minimize parasitic capacitance over a predetermined frequency range. Support for this limit is found in Applicant's specification on Page 6 Line 20 – Page 7 Line 2, Page 8 Line 14-15, and Lines 18-20. This claimed feature allows the bond wire to have a length comprising a fraction of the wavelength for which frequency the RF semiconductor device is designed. Support for this limitation can be found on Page 9 Lines 14-15. Further, Claim 1 has been amended to recite that the encapsulant, has a consistent dielectric constant over a predetermined frequency range. Support for this limitation can be found on Page 5, lines 11-16. In combination with the encapsulant being operable to shunt thermal capacitance and thermal resistance away from the semiconductor die, these additional features allow the RF semiconductor device to have a stable and predictable operating characteristic over the predetermined frequency range.

In contrast, U.S. Patent 6,753,597 B1 to Crowley et al. is directed to a semiconductor package including a lead 38 having an etched part 40 that is thinner than the lead 38 itself. (See Column 5 Lines 48-50). Likewise, the lower side area of the chip paddle 36 is etched, and the underside etching of the lead 38 and the part 40 results in an improvement in the locking strength to a body package 44 and the fluidity of an encapsulation material during the encapsulation step. (Column 5 Lines 50-56). Crowley provides no teaching or suggestion that the integrated circuit is an RF circuit, or how parasitic capacitance would be effected by the etched lead, over a predetermined frequency range which is the focus of Applicant's claimed invention. The main reference Nakayama '023 teaches a "conventional" resin material uniformly filling the molding resin material in the package, and the grain diameters of the fillers for facilitating same. (Column 17, lines 52-53) There is no teaching or suggestion of the dielectric constant of the resin material, nor is it inherent that the

resin material has a uniform dielectric constant. Rather, the granular size of the resin is the focus of Nakayama (Column 13, lines 15-18). Further, the semiconductor chip discussed is not referenced as an RF circuit where such a parameter is crucial. The dielectric constant of the resin in Nakayama may very well have a non-uniform dielectric constant because this not an issue for the non-RF circuit discussed, and thus there is no inherency. Applicant's claimed invention addresses the short comings of the prior art, such as Nakayama and Crowley, that accept encapsulants with a varying or unpredictable dielectric constant. The combination of Nakayama and Crowley fails to teach or suggest the claimed invention, operable over an RF frequency, having an encapsulant having a consistent dielectric constant and adapted to minimize parasitic capacitance over a predetermined frequency range, and a shaped lead shaped to minimize parasitic capacitance.

Dependent Claim 9, as amended, further recites that the configured lead has a rounded shape expanding outward toward the substrate.

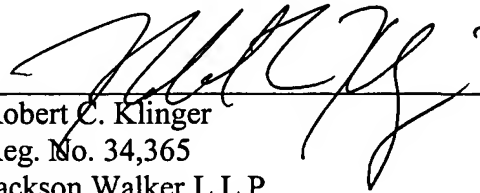
Independent Claim 40 and 42 have each been amended commensurate with independent Claim 1, and are allowable for foregoing reasons as well.

A two month extension of time along with the requisite fee is included herewith.

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The Examiner is hereby authorized to debit deposit account number 50-1752, to cover any additional fees which may be required. A prompt examination and allowance of the pending claims is earnestly solicited.

Respectfully Submitted,



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